Stratoware/Miltech Simulations Bo105

Fuel System

Tank layout, pump operation, and fuel monitoring for both engines.

The fuel system of the Bo 105 comprises three subsystems: storage, supply, and indication.

Fuel is stored in three underfloor bladder cells forming two tanks (main tank and supply tank) and is transferred between them by electric pumps under pilot control. The supply tank then feeds the two engines through dedicated supply lines, each with its own emergency shutoff valve. Quantity and pressure are monitored from cockpit indicators on the main instrument panel, with a low-fuel warning on the warning light panel.

Tanks

Supply Tank

The supply tank is located immediately aft of the forward landing gear cross tube and provides fuel directly to the engines. The supply tank holds approximately 24 US gallons of usable fuel and serves as the immediate feed to both engines.

Main Tank

Two additional bladder cells, located forward and aft of the rear landing gear cross tube, are interconnected by a large-diameter tube to form the main tank. The main tank has a usable capacity of approximately 124 US gallons and feeds the supply tank via two electric transfer pumps.

Refuelling

Refuelling is performed through the standard MSFS fuel and payload menu. There are no special procedures. The main and supply tanks fill according to the values set in the menu.

Fuel Supply

Fuel flow from tank to engine is driven by four electric pumps, all controlled from the centre console switch panel:

Main Tank Pumps

Two transfer pumps (MAIN TANK 1 and MAIN TANK 2) that move fuel from the main tank into the supply tank. Both pumps run in parallel and feed a common supply tank input.

Supply Tank Pumps

Two supply pumps (SUPPLY TANK ENG 1 and SUPPLY TANK ENG 2) that pressurise the fuel lines from the supply tank to each engine. Each pump feeds its respective engine independently.

Valves

Between each supply tank pump and its engine sits an electrically operated emergency fuel shutoff valve, controlled by the EMERG FUEL VALVE 1 and EMERG FUEL VALVE 2 switches on the switch panel. Both switches are guarded to prevent accidental actuation. Closing a valve cuts fuel supply to that engine and is a mandatory step during engine emergency shutdown and fire procedures.

Caution
Important: the two main tank transfer pumps (MAIN TANK 1 and MAIN TANK 2) must be on whenever the engines are running. The supply tank holds only around 24 US gallons of usable fuel and is continuously drawn down by the engines in flight. If both transfer pumps are off, the supply tank will not be replenished from the main tank and will eventually run dry, causing fuel starvation and dual engine failure, regardless of how much fuel remains in the main tank. The LOW FUEL warning will provide some advance notice, but it is not a substitute for correct pump operation.

Indicators

Fuel Quantity Indicator

Dual gauge simultaneously displaying usable fuel in both the supply tank (S) and the main tank (M). The scale is graduated in kp × 10, so an indication of 6 on the scale corresponds to 60 kp (approximately 60 kg) of fuel. Usable fuel is exhausted when a pointer reads zero.

Fuel Pressure Indicator

Dual gauge simultaneously displaying fuel supply pressure for each engine, marked 1 and 2. Normal operating range is 0.6-1.7 kp/cm², the yellow arc covers 0-0.6 kp/cm², and the red radial marks the 1.7 kp/cm² maximum.

Annunciators

LOW FUEL

Illuminates red when the supply tank usable quantity drops below 60 kg. The warning is triggered purely on supply tank quantity in this addon, regardless of main tank state or pump status. Its function can be tested at any time using the LOW FUEL TEST pushbutton on the centre console switch panel, which will illuminate the warning light and drop the quantity gauge needle for as long as the button is held.

FILT 1 and FILT 2 (INOP)

In the real aircraft, these warnings illuminate when the respective engine-mounted fuel filter becomes clogged and bypass has begun. Fuel filter clogging is not simulated in this addon.